

In the Claims

Please amend the claims as follows:

1. (currently amended) An apparatus that receives pseudo-differential voltage signaling including a common reference voltage and a plurality of signal voltages, comprising:

a reference receiver that receives the common reference voltage of the pseudo-differential voltage signaling and in response produces a buffered voltage that is derived at least in part from the common reference voltage;

signal receivers associated respectively with the ~~one or more~~ plurality of signal voltages;

wherein ~~an individual signal receiver receives both its~~ each of the signal receivers receives both an associated signal voltage and the buffered voltage; and

wherein ~~said individual signal receiver evaluates its~~ each of the signal receivers evaluates the associated signal voltage and the buffered voltage to produce an output voltage.

2. (currently amended) An apparatus as recited in claim 1, wherein ~~said individual signal receiver~~ each of the signal receivers evaluates by comparing the associated signal voltage and the buffered voltage to produce ~~[[an]]~~ the output voltage.

3. (previously presented) An apparatus as recited in claim 1, wherein the buffered voltage is the difference between the common reference voltage and a distributed reference voltage.

4. (previously presented) An apparatus as recited in claim 1, wherein the buffered voltage is proportional to the common reference voltage.

5. (currently amended) An apparatus as recited in claim 1, wherein the buffered voltage represents the noise of the plurality of signal voltages relative to the common reference voltage.

6. (currently amended) An apparatus as recited in claim 1, wherein the reference receiver also receives a distributed reference voltage that is received by each of the signal receivers,

wherein the reference receiver is responsive to the distributed reference voltage and the common reference voltage to produce the buffered voltage.

7. (currently amended) An apparatus as recited in claim 1, wherein the reference receiver also receives a distributed reference voltage that is received by each of the signal receivers, wherein the reference receiver compares the distributed reference voltage and the common reference voltage to produce the buffered voltage.

8. (currently amended) An apparatus as recited in claim 1, wherein the reference receiver also receives a distributed reference voltage that is received by each of the signal receivers, wherein the reference receiver compares the distributed reference voltage and the common reference voltage to produce the buffered voltage, the buffered voltage representing the difference between the distributed reference voltage and the common reference voltage.

9. (currently amended) An apparatus as recited in claim 1, the signal receivers further comprising:

a plurality of signal buffers that receive the plurality of signal voltages and in response produce buffered signal voltages, wherein each buffered signal voltage is subject to a signal capacitance;

the buffered voltage being subject to a reference capacitance that is greater than the signal capacitance;

each of the plurality of signal buffers having a first electrical current capacity;

the reference receiver having a second electrical current capacity that is greater than the first electrical current capacity by a ratio equal to the ratio of the reference capacitance to the signal capacitance.

10. (currently amended) An apparatus as recited in claim 1, the signal receivers further comprising:

a plurality of signal buffers that receive the plurality of signal voltages and in response produce buffered signal voltages, wherein each buffered signal voltage is subject to a signal capacitance;

the buffered voltage being subject to a reference capacitance that is greater than the signal capacitance;

each of the plurality of signal buffers having a first electrical current capacity;

the reference receiver having a second electrical current capacity that is greater than the first electrical current capacity by a ratio equal to the ratio of the reference capacitance to the signal capacitance; and

wherein the reference receiver and the plurality of signal buffers are source-followers.

11. (currently amended) An apparatus as recited in claim 1, the signal receivers further comprising:

a plurality of signal buffers that receive the plurality of signal voltages and in response produce buffered signal voltages.

12. (currently amended) An apparatus as recited in claim 1, the signal receivers further comprising:

a plurality of signal buffers that receive the plurality of signal voltages and in response produce buffered signal voltages;

wherein the reference receiver and the plurality of signal buffers are source-followers.

13. (Original) An apparatus as recited in claim 1, wherein the reference receiver has a unity gain.

14. (currently amended) An apparatus as recited in claim 1, wherein:

the signal voltage of ~~the individual signal receiver~~ each of the signal receivers has associated input capacitance and inductance that result in a resonant input frequency;

the reference receiver has a bandwidth that is greater than the resonant input frequency.

15. (currently amended) An apparatus as recited in claim 1, wherein:  
the associated signal voltage of ~~the individual signal receiver~~ each of the signal receivers  
has associated input capacitance and inductance that result in a resonant input frequency; and  
the reference receiver has a bandwidth of at least ten times the resonant input frequency.

16. (currently amended) An apparatus as recited in claim 1, wherein ~~each~~ the associated  
signal voltage represents one of two values and the signal receivers compare the buffered voltage  
and the plurality of signal voltages to determine which of the two values is represented by ~~each~~  
the associated signal voltage.

17. (previously presented) An apparatus as recited in claim 1, the common reference  
voltage and the buffered voltage being subject to similar impedances.

18. (currently amended) An apparatus as recited in claim 1, the common reference  
voltage and the associated signal voltage being subject to similar impedances, wherein coupled  
signal noise is introduced approximately equally in the buffered voltage and the plurality of  
~~pseudo-differential~~ signal voltages, said coupled signal noise being canceled in the evaluation  
performed by each of the signal receivers ~~receiver~~.

19. (currently amended) An integrated circuit comprising:  
a reference input that receives a common reference voltage;  
a plurality of signal inputs configured to receive pseudo-differential signal voltages that  
represent values in terms of relationships between the pseudo-differential signal voltages and the  
common reference voltage;  
a reference buffer that receives the common reference voltage and in response produces a  
buffered reference voltage;  
signal comparators associated respectively with the pseudo-differential signal voltages,  
each signal comparator comparing the buffered reference voltage and one of the pseudo-

differential signal voltages to determine the value represented by said one of the pseudo-differential signal voltages;

wherein ~~the reference and signal inputs~~ the reference and the plurality of signal inputs have similar impedances, coupled signal noise being introduced approximately equally in the buffered reference voltage and the pseudo-differential signal voltages, said coupled signal noise being canceled in the comparison performed by the signal comparators.

20. (currently amended) An integrated circuit as recited in claim 19, further comprising:  
a plurality of signal buffers that receive the pseudo-differential signal voltages and in response produce buffered signal voltages, wherein each buffered signal voltage is subject to a signal capacitance;

the buffered reference voltage being subject to a reference capacitance that is greater than the signal capacitance;

each of the plurality of the signal buffers having a first electrical current capacity;

the reference buffer having a second electrical current capacity that is greater than the first electrical current capacity by a ratio equal to the ratio of the reference capacitance to the signal capacitance.

21. (currently amended) An integrated circuit as recited in claim 19, further comprising:  
a plurality of signal buffers that receive the pseudo-differential signal voltages and in response produce buffered signal voltages, wherein each buffered signal voltage is subject to a signal capacitance;

the buffered reference voltage being subject to a reference capacitance that is greater than the signal capacitance;

each of the plurality of the signal buffers having a first electrical current capacity;

the reference buffer having a second electrical current capacity that is greater than the first electrical current capacity by a ratio equal to the ratio of the reference capacitance to the signal capacitance; and

wherein the reference buffer and the signal buffers are source-followers.

22. (Original) An integrated circuit as recited in claim 19, further comprising:  
a plurality of signal buffers that receive the pseudo-differential signal voltages and in response produce buffered signal voltages for comparison by the signal comparators.

23. (currently amended) An integrated circuit as recited in claim 19, further comprising:  
a plurality of signal buffers that receive the pseudo-differential signal voltages and in response produce buffered signal voltages;  
wherein the reference buffer and the plurality of the signal buffers are source-followers.

24. (Original) An integrated circuit as recited in claim 19, wherein the reference buffer has a unity gain.

25. (currently amended) An integrated circuit as recited in claim 19, wherein:  
the plurality of the signal inputs have associated input capacitances and inductances that result in a resonant input frequency;  
the reference buffer has a bandwidth that is greater than the resonant input frequency.

26. (currently amended) An integrated circuit as recited in claim 19, wherein:  
each of the plurality of signal inputs ~~[[have]~~ has an associated input capacitance and inductance that ~~capacitances and inductances~~ that result in a resonant input frequency ~~frequencies~~; and  
the reference buffer has a bandwidth of at least ten times the resonant input frequency.

27. (currently amended) An integrated circuit as recited in claim 19, wherein each of the pseudo-differential signal voltages ~~signal voltage~~ represents one of two values and the signal comparators compare the buffered reference voltage and the pseudo-differential signal voltages to determine which of the two values is represented by each of the pseudo-differential signal voltages ~~signal voltage~~.

28. (currently amended) An integrated circuit as recited in claim 19, the reference input and the plurality of signal inputs having matching impedances.

29. (currently amended) A system comprising:

a first integrated circuit that transmits a common reference voltage and a plurality of pseudo-differential signal voltages, wherein the plurality of pseudo-differential signal voltages represent values in terms of relationships between the plurality of pseudo-differential signal voltages and the common reference voltage;

a second integrated circuit that receives the common reference voltage and the plurality of pseudo-differential signal voltages;

the second integrated circuit having a reference buffer that receives the common reference voltage and in response produces a buffered reference voltage;

the second integrated circuit having signal comparators associated respectively with the plurality of pseudo-differential signal voltages, each of the signal ~~comparator~~ comparators comparing the buffered reference voltage and a respective one of the plurality of pseudo-differential signal voltages to determine the value represented by said one of the plurality of pseudo-differential signal voltages;

wherein the second integrated circuit is configured to introduce approximately equal coupled signal noise in the buffered reference voltage and the plurality of pseudo-differential signal voltages, said approximately equal coupled signal noise being canceled in the comparisons performed by the signal comparators.

30. (currently amended) A system as recited in claim 29, the second integrated circuit further comprising:

a plurality of signal buffers that receive the pseudo-differential signal voltages and in response produce buffered signal voltages, wherein each of the buffered signal ~~voltage~~ voltages is subject in the second integrated circuit to a signal capacitance;

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the buffered reference voltage being subject in the second integrated circuit to a reference capacitance that is greater than the signal capacitance;

each of the signal buffers having a first electrical current capacity;

the reference buffer having a second electrical current capacity that is greater than the first electrical current capacity by a ratio equal to the ratio of the reference capacitance to the signal capacitance.

31. (currently amended) A system as recited in claim 29, the second integrated circuit further comprising:

a plurality of signal buffers that receive the pseudo-differential signal voltages and in response produce buffered signal voltages, wherein each of the buffered signal ~~voltage~~ voltages is subject in the second integrated circuit to a signal capacitance;

the buffered reference voltage being subject in the second integrated circuit to a reference capacitance that is greater than the signal capacitance;

each of the signal buffers having a first electrical current capacity;

the reference buffer having a second electrical current capacity that is greater than the first electrical current capacity by a ratio equal to the ratio of the reference capacitance to the signal capacitance; and

wherein the reference buffer and the signal buffers are source-followers.

32. (Original) A system as recited in claim 29, the second integrated circuit further comprising:

a plurality of signal buffers that receive the pseudo-differential signal voltages and in response produce buffered signal voltages.

33. (Original) A system as recited in claim 29, the second integrated circuit further comprising:

a plurality of signal buffers that receive the pseudo-differential signal voltages and in response produce buffered signal voltages;



wherein the reference buffer and the signal buffers are source-followers.

34. (Original) A system as recited in claim 29, wherein the reference buffer is a unity gain amplifier.

35. (previously presented) A system as recited in claim 29, wherein:  
the second integrated circuit has signal inputs that receive the plurality of pseudo-differential signal voltages, the signal inputs having associated input capacitance and inductance that result in a resonant input frequency;  
the reference buffer has a bandwidth that is greater than the resonant input frequency.

36. (previously presented) A system as recited in claim 29, wherein:  
the second integrated circuit has signal inputs that receive the plurality of pseudo-differential signal voltages, the signal inputs having associated input capacitance and inductance that result in a resonant input frequency; and  
the reference buffer has a bandwidth of at least ten times the resonant input frequency.

37. (currently amended) A system as recited in claim 29, wherein each of the pseudo-differential signal ~~voltage~~ voltages represents one of two values and the comparators compare the buffered reference voltage and the pseudo-differential signal voltages to determine which of the two values is represented by each of the pseudo-differential signal ~~voltage~~ voltages.

38. (previously presented) A system as recited in claim 29, wherein the second integrated circuit has signal inputs that receive the pseudo-differential signal voltages and a reference input that receives the common reference voltage, the reference input and signal inputs having similar impedances.

39. (currently amended) A method comprising:

receiving pseudo-differential signaling that includes a common reference voltage and a plurality of signal voltages;

producing a buffered voltage based at least in part on the common reference voltage;

evaluating the buffered voltage and one of the plurality of signal voltages to determine a value represented by said one of the plurality of signal voltages.

40. (currently amended) A method as recited in claim 39, wherein the evaluating comprises comparing said one of the plurality of signal voltages and the buffered voltage to produce an output voltage.

41. (Original) A method as recited in claim 39, wherein the buffered voltage is the difference between an undistributed reference voltage and a distributed reference voltage.

42. (previously presented) A method as recited in claim 39, wherein the buffered voltage is proportional to the common reference voltage.

43. (currently amended) A method as recited in claim 39, wherein the buffered voltage represents the noise of the plurality of signal voltages.

44. (previously presented) A method as recited in claim 39, said producing comprising comparing the distributed reference voltage that is received by signal receivers and an undistributed reference voltage that is not received by the signal receivers.

45. (previously presented) A method as recited in claim 39, said producing comprising comparing a distributed reference voltage that is received by signal receivers and an undistributed reference voltage that is not received by the signal receivers, the buffered voltage representing the difference between the undistributed reference voltage and the distributed reference voltage.

46. (currently amended) A method as recited in claim 39, further comprising:  
buffering the plurality of signal voltages with signal buffers to produce buffered signal voltages, wherein each of the buffered signal ~~voltage~~ voltages is subject to a signal capacitance;  
said producing the buffered voltage being performed with a reference buffer, the buffered voltage being subject to a reference capacitance that is greater than the signal capacitance;  
each of the signal buffers having a first electrical current capacity;  
the reference buffer having a second electrical current capacity that is greater than the first electrical current capacity by a ratio equal to the ratio of the reference capacitance to the signal capacitance.

47. (currently amended) A method as recited in claim 39, further comprising:  
buffering the plurality of signal voltages with source-follower signal buffers to produce buffered signal voltages, wherein each of the buffered signal ~~voltage~~ voltages is subject to a signal capacitance;  
said producing the buffered voltage being performed with a source-follower reference buffer, the buffered voltage being subject to a reference capacitance that is greater than the signal capacitance;  
each of the source-follower signal buffers having a first electrical current capacity;  
the reference buffer having a second electrical current capacity that is greater than the first electrical current capacity by a ratio equal to the ratio of the reference capacitance to the signal capacitance.

48. (currently amended) A method as recited in claim 39, further comprising:  
buffering the plurality of signal voltages to produce buffered signal voltages.

49. (currently amended) A method as recited in claim 39, further comprising:  
buffering the plurality of signal voltages with source-followers to produce buffered signal voltages.

50. (currently amended) A method as recited in claim 39, wherein:  
the plurality of signal voltages are received by signal inputs having associated input capacitances and inductances that define a resonant frequency;  
producing the buffered voltage with a unity gain buffer having a bandwidth that is greater than the resonant frequency.

51. (currently amended) A method as recited in claim 39, wherein:  
the plurality of signal voltages are received by signal inputs having associated input capacitances and inductances that define a resonant input frequency; and  
producing the buffered voltage is performed with a unity gain buffer having a bandwidth of at least ten times the resonant input frequency.

52. (currently amended) A method as recited in claim 39, wherein:  
the common reference voltage is received by a reference input;  
the plurality of signal voltages are received by signal inputs; and  
the reference and signal inputs have similar impedances.

53. (currently amended) A method as recited in claim 39, further comprising introducing coupled signal noise approximately equally in the buffered ~~reference~~ voltage and the plurality of signal voltages, said coupled signal noise being canceled in the comparing.

54. (currently amended) An apparatus that uses pseudo-differential voltage signaling, comprising:  
signal receivers associated respectively with a plurality of signal voltages;  
a reference receiver that receives both an undistributed reference voltage and a distributed reference voltage, wherein the distributed reference voltage is distributed to the signal receivers and the undistributed reference voltage is not distributed to the signal receivers;

wherein the reference receiver evaluates the undistributed reference voltage and the distributed reference voltage to produce a buffered voltage that represents the difference between the undistributed reference voltage and the distributed reference voltage;

wherein ~~an individual signal receiver receives both its~~ each of the signal receiver receives both an associated signal voltage and the buffered voltage; and

wherein said ~~individual signal receiver adjusts its~~ each of the signal receivers adjusts the associated signal voltage by the buffered voltage to produce an output voltage.

55. (Original) An apparatus as recited in claim 54, wherein said signal receivers are two-stage receivers.

56. (currently amended) An apparatus as recited in claim 54, wherein said signal receivers are two-stage receivers, a second stage of the signal receivers adjusts the associated signal voltage.

57. (currently amended) An apparatus as recited in claim 54, wherein the buffered voltage represents the noise of the plurality of signal voltages relative to the undistributed reference voltage.

58. (Original) An apparatus as recited in claim 54, wherein the buffered voltage is a differential voltage.

59. (currently amended) An integrated circuit that uses pseudo-differential voltage signaling, comprising:

two-stage receivers associated respectively with a plurality of signal voltages;  
a reference receiver that receives both an undistributed reference voltage and a distributed reference voltage, wherein the distributed reference voltage is distributed to the two-stage receivers and the undistributed reference voltage

is not distributed to the ~~signal~~ two-stage receivers;

wherein the reference receiver compares the undistributed reference voltage and the distributed reference voltage to produce a buffered voltage that represents the difference between the undistributed reference voltage and the distributed reference voltage;

wherein the first stage of ~~an individual signal receiver compares its~~ each of the two-stage receivers compares an associated signal voltage to the distributed reference voltage to produce a voltage differential signal; and

wherein the second stage of said ~~individual two-stage receiver~~ each of the two-stage receivers adjusts the voltage differential signal by the buffered voltage to produce an output voltage.

60. (previously presented) An integrated circuit as recited in claim 59, the two-stage receivers have an input impedance similar to that of the reference receiver.

61. (currently amended) An integrated circuit as recited in claim 59, wherein the buffered voltage represents the noise of the plurality of signal voltages relative to the undistributed reference voltage.

62. (previously presented) An integrated circuit as recited in claim 59, wherein the buffered voltage is a differential voltage.

63. (currently amended) A system comprising:  
a first integrated circuit that transmits a common reference voltage and a plurality of pseudo-differential signal voltages, wherein the plurality of pseudo-differential signal voltages represent values in terms of relationships between the pseudo-differential signal voltages and the common reference voltage;

a second integrated circuit that receives the common reference voltage and the plurality of pseudo-differential signal voltages;

the second integrated circuit having a reference receiver that receives the common reference voltage and in response produces a buffered voltage;

the second integrated circuit having two-stage signal receivers associated respectively with the plurality of pseudo-differential signal voltages, each of the two-stage signal ~~receiver~~ receivers adjusting one of the plurality of pseudo-differential signal voltages by the buffered voltage to produce an output voltage.

64. (currently amended) A system as recited in claim 63, wherein each of the two-stage signal ~~receiver~~ receivers has an input impedance similar to that of the reference receiver.

65. (currently amended) A system as recited in claim 63, wherein:  
the reference receiver compares a distributed common reference voltage to an undistributed common reference voltage to produce the buffered voltage;  
the first stage of each of the ~~an individual~~ two-stage signal ~~receiver~~ receivers compares ~~[[its]]~~ an associated pseudo-differential signal voltage to a distributed reference voltage to produce a voltage differential signal; and  
the second stage of each of the ~~said individual~~ two-stage signal ~~receiver~~ receivers adjusts the voltage differential signal by the buffered voltage to produce an output voltage.

66. (currently amended) A system as recited in claim 63, wherein the buffered voltage represents the noise of the plurality of pseudo-differential signal voltages.

67. (Original) A system as recited in claim 63, wherein the buffered voltage is a differential voltage.